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10/667,901	09/23/2003	Joseph Cargnelli	9351-244	8648
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			ART UNIT 1745	PAPER NUMBER
DATE MAILED: 06/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,901

Applicant(s)

CARGNELLI ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This office action is responsive to the amendment filed on 05/19/06. The applicant has overcome most of the objections and the 35 USC 112 rejections. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments and remarks. However, the present claims are finally rejected over the same applied art as seen below and for the reasons of record:

Election/Restrictions

1. Newly submitted claims 11-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 11-16 are drawn to a fuel cell system and a method of operating the same including constant operational characteristic; additionally, claims 17-20 are directed to a fuel cell system including specific recirculation loops. Given that pending claims 1-2, 4-7 and 9-10 expressly require different operational characteristics and/or a operation characteristic spectrum, it is contended that claims 11-16 as mentioned above represent a different mutually exclusive embodiment of such a fuel cell system and its operating method. By the very same nature of the subject matter of claims 1-2, 4-7 and 9-10 including different operational characteristics and claims 11-16 including constant operational characteristic, it is contended that they both represent embodiments that do not overlap in scope. With respect to claims 17-20, in view of applicant's admission that: "*New claims 17-20 are directed to other aspects of the invention, namely details of recirculation of the reactants and coolant circuits*" (See page 21 of the amendment dated 05/19/06), the examiner

further contends that these claims also represent a different fuel cell embodiment which is mutually exclusive from the embodiment of pending claims 1-2, 4-7 and 9-10.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-20 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Note:** in view of the addition of claims 11-16 directed to a fuel cell system and a method of operating the same under constant operational characteristic, the examiner herein reserves the right to issue a restriction requirement between fuel cell systems (apparatus) and methods of operating the same (process) in any other subsequent action because the subject matter of claims 11-16 itself is evidence that the claimed fuel cell system can be used to practice a materially different method; as well as that the claimed method can be practiced by a materially different fuel cell system. Thus, the examiner will eventually evaluate if such a restriction requirement is necessary in view of applicant's implicit admission that fuel cell system can be operated at constant operational characteristics or under a spectrum of operational characteristics and further in view of different classification for fuel cell apparatus and fuel cell methods.*

Specification

2. The amendment filed 05/19/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: (claims 2 and 7) in the phrase “*actual power output*”, the term “*actual*” is not supported by the specification as filed. Nowhere in the

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specification as filed appears to be reasonable written description to support it. Although applicant's disclosure recites or mentions many times the phrase "power output" or variant thereof, there is no specific recitation of the term "actual" as well as what maybe its implication in the claim language.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added material which is not supported by the original disclosure is as follows: (claims 2 and 7) in the phrase "*actual power output*", the term "*actual*" is not supported by the specification as filed. Nowhere in the specification as filed appears to be reasonable written description to support it. Although applicant's disclosure recites or mentions many times the phrase "power output" or variant thereof, there is no specific recitation of the term "actual" as well as what maybe its implication in the claim language.

Applicant is required to cancel the new matter in the reply to this Office Action.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-2, 4-7 and 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 recites the limitation "the power output" in line 5. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 10 recites the limitation "the levels" in line 2. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: it is not understood or clear whether steps (b) and (c) of claim 9 are performed simultaneously with and/or before or after steps (b) and (c) of claim 6; or how the steps of claim 9 are operationally integrated with the steps of claim 6. Specifically, step (b) of claim 6 calls for "connecting a load to the fuel cell system and providing a drive current from the fuel cell system to drive the load" whereas step (b) of claim 9 recites "comprises determining a current operating range of the fuel cell system"; and while this may seem achievable by just re-programming the controller, there is no direct relationship between those two steps in order to substitute one with another or vice-versa. The same is also valid for steps (c) of claims 6 and 9. Further clarification is thus required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-2, 4, 6-7 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Blum et al 2005/0008905.

The present claims are directed to a fuel cell system and method of operating the same wherein the disclosed inventive concept comprises the specific controlling of operation characteristics of the fuel cell system.

Regarding claims 1 and 6:

Blum et al disclose a method and apparatus for regulating electrical power output of a fuel cell system (TITLE/ABSTRACT). The fuel cell system also contains a controller to set the mass flow of the supply fuel and the mass flow of the oxidant stream to the fuel processing system; wherein the mass flow of the hydrogen-rich gas can be set in dependence on the dynamic response of the system (ABSTRACT). The fuel cell to supply power to the electrical load is disclosed (P. 0030). In this case, the fuel cell peripheral is the reactant supply line (P. 0028).

It is disclosed that the controller controls the system based upon or using measured values or calculated values of the mass flow of the hydrogen rich-gas (P. 0032). Of particular interest is that Blum et al employ a relationship between the current demand and the fuel mass flow as a

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function of time to control and operate the fuel cell system (P. 0045-0046/ FIGURE 3). *Thus, Blum et al specifically use a measured fuel cell operation characteristic to control another respective operation characteristic. That is to say, the another respective operation characteristic is responsive to the measured fuel cell operation characteristic as best understood by the examiner.*

Figure 3 below illustrate the so-called relationship between the current demand and the flow of hydrogen:

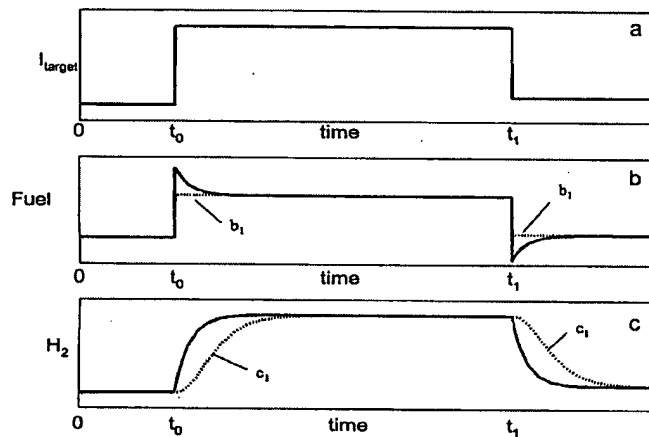


Fig. 3

Examiner's note: *the limitation “adapted to” does not distinguish over prior art because the recitation that an element/feature/member is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform.*

As to claims 2 and 7:

Blum et al control the fuel mass flow in response to the current demand of the system (P. 0045-0046). In this case, the fuel cell peripheral is the reactant supply line, specifically the fuel supply line or oxidant supply line (P. 0028).

With reference to claims 4 and 9:

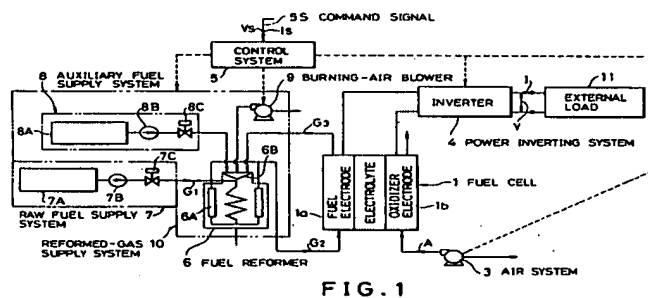
It is disclosed that the controller controls the system based upon or using measured values or calculated values of the mass flow of the hydrogen rich-gas (P. 0032). Of particular interest is that Blum et al employ a relationship between the current demand and the fuel mass flow as a function of time to control and operate the fuel cell system (P. 0045-0046/ FIGURE 3). *Thus, Blum et al readily envision using stored values as fuel cell operational threshold.*

Thus, the claims are anticipated.

12. Claims 1 and 6 are (*at least*) rejected under 35 U.S.C. 102(b) as being clearly anticipated by Harashima 5290641.

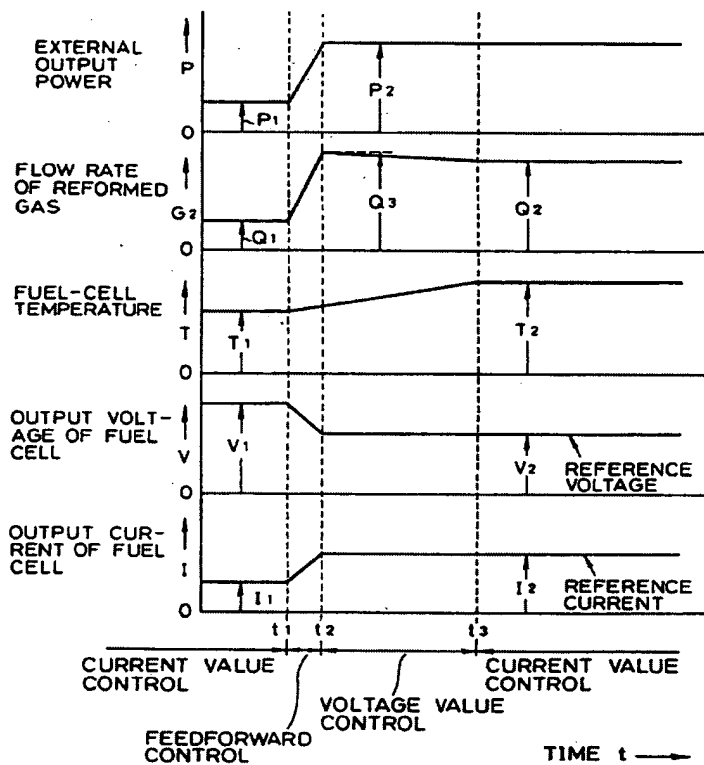
Harashima disclose method of controlling operation of fuel cell power supply (TITLE). Essentially, a fuel cell power supply in which the flow rates of reactant gases are set at a flow rates required for a steady state operation plus predetermined extra amounts when an output power increase command is issued (ABSTRACT). Harashima teaches supplying the power of the fuel cell to a load (COL 1, lines 30-32). The control of the entire system is accomplished according to control signals from a control system which receives a command signal that designates an output power of the fuel cell (COL 1, lines 32-35).

Figure 1 depicts a fuel cell system including a fuel cell 1; and control system 5 and reactant supply means peripheral:



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Additionally, **Figure 6** below is illustrative of the general variable considerations and operational characteristics of the fuel cell employed to control the fuel cell system, particularly, output power, flow rate, output voltage and output current:

**FIG. 6**

Examiner's note: the limitation "adapted to" does not distinguish over prior art because the recitation that an element/feature/member is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform.

Thus, the instant claims are anticipated.

13. Claims 1-2, 4-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda et al 2005/0136311.

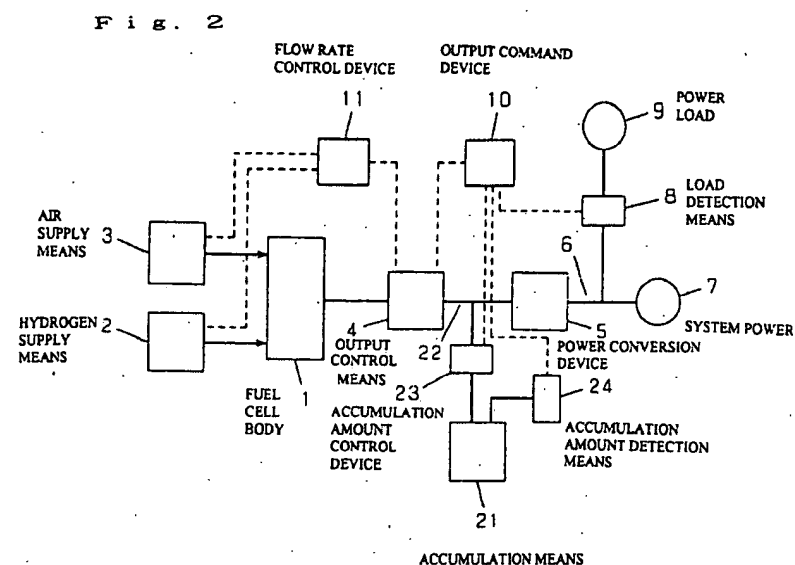
Concerning claims 1 and 6:

In general, Ueda et al disclose power generation control system and method (TITLE). A fuel cell power generation system including: load detection means of detecting power requested by a load; and output control means of accumulating a time at which a detected power requested by the load is equal to or larger than a predetermined value when a fuel cell body does not generate power to be supplied to the load, and allowing the fuel cell body to start generating power to be supplied to the load according to a predetermined rule based on an accumulation result (ABSTRACT).

Disclosed is that at an external load command, a power control unit 35 controls a flow rate control unit 36 which controls the flow rate of the hydrogen supply by the hydrogen supply means (*the reactant supply means peripheral*) and the flow rate of the air supply by the air supply means 33 such that the flow rates can be optimum values; and the power converter controls the amount of electricity output by the fuel cell body, thereby successfully controlling the output power (P. 0228; 0002; 0009; 0021-0025). *Thus, Ueda et al show with sufficient specificity to control the flow rate of reactant in response to output power requirements.*

Figure 2 illustrates several features including the output control means; the load; the load detection means; the accumulation amount control device and the like.

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With respect to claims 2 and 7:

Ueda et al teach that at an external load command, a power control unit 35 controls a flow rate control unit 36 which controls the flow rate of the hydrogen supply by the hydrogen supply means (*the reactant supply means peripheral*) and the flow rate of the air supply by the air supply means 33 such that the flow rates can be optimum values; and the power converter controls the amount of electricity output by the fuel cell body, thereby successfully controlling the output power (P. 0228; 0002; 0009; 0021-0025). *Thus, Ueda et al show with sufficient specificity to control the flow rate of reactant in response to output power requirements.*

On the matter of claims 4 and 9:

Ueda et al disclose the employment of output control means of accumulating a time at which a detected power requested by the load is equal to or larger than a predetermined value (ABSTRACT). *In this instant, the predetermined value corresponds to the stored valued in the memory of the control system.*

As far as claims 5 and 10:

The idle level does occur when a fuel cell body does not generate power to be supplied to the load, and allowing the fuel cell body to start generating power to be supplied to the load according to a predetermined rule based on an accumulation result (ABSTRACT).

Thus, the present claims are anticipated.

Response to Arguments

14. Applicant's arguments filed 05/19/06 have been fully considered but they are not persuasive.

15. At the outset, it has been noted that applicant argued the following at page 20, 3rd full paragraph in the 05/19/06 amendment: *"Claim 1 now further specifies that the "fuel cell operation characteristic spectrum", previously defined and discussed above, is divided into at least two ranges indicative of at least two corresponding ranges of power output. Thus, in the case of measurement of the fuel cell current, this simply means that the measured current values are divided into two ranges, which typically can be from zero to some mid-point and from that mid-point to a maximum value. Clearly, again for the case of current measurement, these two ranges would each be indicative of separate ranges of power output"*. Noticeably, this is not recited in the present claims. Simply put, applicant appears to be asserting that the present claims do recite *"the measured current values are divided into two ranges, which typically can be from zero to some mid-point and from that mid-point to a maximum value"* because applicant equates the present claim language to the foregoing phrase. However, it is emphatically noted that those features upon which applicant currently relies are not recited in the rejected claim(s), nor suggested therein. Although the claims are interpreted in light of the specification, limitations

from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26

USPQ2d 1057 (Fed. Cir. 1993). Therefore, applicant's arguments are not commensurate in scope with the present claim language.

16. That being said, let's turn now to briefly address other applicant's arguments. Applicant is of the view that "*none of the prior art is concerned with operating fuel cell peripherals*". In response, the examiner simply states that although all of the prior art references do not focus mostly on operating fuel cell peripherals, namely, their inventive concepts are not centered on specific fuel cell peripherals, there is an inherent degree of controlling the operation of fuel cell peripherals. For example, if the fuel cell is shut down, then fuel cell peripherals will also shut-down. On the other hand, if fuel cell is started, then fuel cell peripherals will also start. Thus, there is certain degree of operational harmonization between the fuel cell per se and its peripherals so as to obtain a working fuel cell system. In that, the term "*system*" itself does encompass such a degree of harmonized control or coordination. To better visualize this, the examiner respectfully states that applicant's arguments appears to imply, for example (in a similar functional level), that in any given vehicle comprising an internal combustion engine or a diesel engine, if the engine is shut-down, engine peripheral units such as a gasoline pump, water cooling system and the likes will continue to operate. That is to say, the engine is stopped but the gasoline pump continues to pump unnecessary gasoline. That is to say, the engine is stopped but the water cooling system continue to run unnecessarily. That is to say, the engine is stopped but any other peripheral unit remains working unnecessarily. There has to be or there exists an implicit degree of coordination, controlling or harmonization between the engine and such peripheral units. The same applies to fuel cell systems. If applicant is still of the view that this is

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in no way a reasonable representation of how fuel cells operate, then, the examiner respectfully requests to the applicant to show objective evidence demonstrating that the fuel cell system of the cited references do not have this implicit teaching.

17. In analyzing Blum et al, applicant is also of the view that *“One can note that the fuel cell 3 is shown as having inlets for the reactants, but no outlets, and no concept of recirculation”*.

While the examiner concedes that “no concept of recirculation” is present in Blum et al, the examiner strenuously contends that having an anode “outlet” or anode exhaust is a conventional structural and functional requirement for the type of fuel cell disclosed by Blum et al. That is to say, the fuel cell unit of Blum et al must include an anode outlet or anode exhaust. There being no outstanding description of fuel cross-over from the anode side to the cathode side of Blum et al or a total (100 %) consumption of hydrogen reactant in the anode side of Blum et al, there has to be an anode outlet to dispose residual or unused hydrogen. If applicant believes otherwise, the examiner respectfully requests to the applicant to show objective evidence demonstrating that the fuel cell system of Blum et al does not have this implicit teaching.

18. Essentially, applicant has further argued that the prior art references are *“silent on details of the structure of the fuel cell and the nature of fuel cell peripherals”* and/or *“without any realization that operating levels of peripherals can be adjusted to reduce parasitic power loads”* and/or *“silent on the issue of controlling peripheral devices which are not devices concerned with supplying reactants and which can be run at a constant rate”*. However, in making that conclusion applicant: a) relies on subject matter or definitions or meanings not currently claimed in the present claims as discussed above (See item 14 above for more information); and b) overlooks the fact that the present claims fail to concretely define “fuel cell operation

characteristic spectrum” in a more clearly manner. As a practical matter, one of ordinary skill in the art can immediately recognize that a fuel cell operation must include at least two operating modes (and sometimes at least three operating modes): **first operating mode** being the standard operating mode for power generation and **second operating mode** being when the fuel cell is shut-down; a **third operating mode** (not necessarily present in all fuel cell systems) may be a fuel cell start-up mode for starting the fuel cell. Of significant importance is that each of the first and second operating modes mentioned above, or each of the first, second and third operating modes (if the fuel cell is designed to include a start-up operational sequence) has its own “fuel cell operation characteristic”. Thus, any fuel cell is necessarily designed to have separate operating characteristics for the power generation mode (the first operating mode) and non-power generation mode [*sic*] (the second operating mode). Simply put, each of the foregoing operating modes requires distinct operation characteristics. Therefore, the combination of the first operating mode operation characteristic and the second operating mode operation characteristic and the third operation mode operation characteristics (if present) creates a spectrum of fuel cell operation characteristics which is divided into at least two ranges (or three ranges, if the third operating mode is present) indicative of fuel cell power output ranges. Hence, at least these first and second operating modes (and third operating mode if present) meet the inventive requirement of forming an operation characteristic spectrum. Note that nothing in the present claims stipulates that shut-down (stopping) operation is excluded from the spectrum.

19. With particular respect to Blum et al, it is contended that Blum et al mention $I_{\text{available}}$, I_{target} and I_{system} , and also mention the employment of “**proportional controllers**” (←***emphasis supplied***) capable of adjusting fuel cell operational parameters (characteristics) in response to

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different fuel cell operating states. Consequently, the use of “proportional controllers” in combination with the well known direct relationship between current (I) and voltage (V) (Ohm law) suggests to those of ordinary skill in the art that Blum et al readily envision a spectrum of operational ranges for power output. Moreover, Blum et al specifically mention that “controllers” respond to shut down operation. Hence, in its broadest reasonable interpretation and assuming arguendo that Blum et al fail to teach the inventive fuel cell operation spectrum (a point not conceded by the examiner), it is again contended that the power generation operation characteristic and the shut-down operation characteristic of Blum et al satisfy the presently claimed operation characteristic spectrum. This very same argument is equally applicable to the discussion of Harashima’641 and Ueda et al’311.

20. With respect to Harashima’641, applicant has further argued that “*the prior art has provided inadequate response, with the flow rate of reformed gas overshooting that required, so that the output reference voltage drops excessively and the reference goes too high*”. Arguments that the alleged anticipatory prior art teaches away from the invention’ or is not recognized as solving the problem solved by the claimed invention, [are] not germane’ to a rejection under section 102.” *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). *See MPEP 2131.05 [R-2] Nonanalogous Art*.

21. In response to applicant's argument that the Harashima reference fails to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., “controlling peripherals that are independent of the load requirement” and “no discussion of controlling the flow rates of coolant, various blowers”) are not recited in the rejected claim(s).

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Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

22. With respect to Ueda et al'311, applicant has also argued that "*Ueda et al are notable for being entire silent on the issue of controlling peripheral devices which are not devices concerned with supplying reactants...*". However, this argument is not well understood because applicant's claims recite that a hydrogen recirculation pump and a hydrogen purging means can be one of the fuel cell peripherals. Clearly, applicant's devices are concerned with supplying reactants in the same manner that Ueda et al's devices are concerned with.

23. With respect to claims 2-3 and 7-8, applicant has argued that "*The claims have now been amended to remove the control of a reactant supply means as being one of the listed fuel cell peripherals, so that this rejection is no longer applicable*". In response, it is indicated that the present claims still recite "hydrogen purging means", and accordingly, the cited references include anode exhaust or anode outlets for directing unused hydrogen out of the fuel cell unit. Therefore, the cited references certainly encompass "hydrogen purging means". Moreover, all of the three cited references, one way or another, disclose, suggest or teach the importance of maintaining suitable harmonization among all components of a fuel cell system (i.e. fuel cell and its peripheral devices) in order to achieve a satisfactory level of performance based upon synergistic operation and cooperation of each and every single component thereof.

24. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant's

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arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. *This applies to applicant's discussion of claims 4-5 and 9-10.*

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Primary Examiner
Art Unit 1745



RAYMOND ALEJANDRO
PRIMARY EXAMINER